



Amendment of the Specification in the second paragraph of the BRIEF SUMMARY OF THE
INVENTION

The present invention employs a computer voting station which is a computer to which a display, an input device, and a printer are connected, and which is running a computer program for directing the voting process for the voter and for vote counting. A ballot scanning machine which is capable of reading ballot selection markings, such as the filled-circle, filled-oval, or filled-rectangle types of voting markings, may also be connected to the voting station. The computer program for the voting system displays the ballot for voting together with instructions for voting and provides for input of votes by the voter. The voter votes by selecting his or her preference in candidates or issue positions by means of an input device recognized by the computer program, and the computer program temporarily stores such vote information in memory or on storage media. A printed ballot produced by the computer voting station which shows the votes of a voter is then presented to the voter and either compared by the voter, or by operation of the computer program for the voting system with a ballot scanning machine, the machine capable of reading ballot selections, with the votes of the voter temporarily stored in the computer. The result of the comparison is then judged acceptable or unacceptable by the voter, in the case of comparison by the voter, or by the computer program for the voting system~~[[, in]] the case of comparison by the computer for the voting station which is the preferred embodiment,~~ using the ballot scanning machine, so that only printed ballots which show votes by the voter identical to the votes of the voter stored in the computer voting station will be accepted for final tabulation. Such final tabulation is then made by a tabulation machine for the precinct.

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Amendment of the Specification with the addition of the

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram of a voting station used in the voting system of the present invention.

FIG. 2 is a block diagram of an example of a voting system configuration of the present invention.

FIG. 3 is a diagram of the relation between the steps of the voting method using the voting system of the present invention.



Amendment of the Specification in the DETAILED DESCRIPTION OF THE INVENTION

The present invention is a voting system which provides for auto-verification, auto-verification meaning here the process by which the voter has the opportunity and the responsibility to verify that the printed ballot which he or she finally presents as his or her votes shows the votes he or she intended. The voting system also provides for correction of his or her vote if the printed ballot by which he or she voted is not as he or she intended, such a correction being effected by repeating the operation of the voting station in the voting process. Although the voting system which is the present invention is complete as the instrument by which an election process may be carried out, the voting process is ultimately founded upon the law which governs elections and therefore the manner in which the voting system is managed and operated. Thus, there may be many variations in the process that will be effective and equivalent in the management and operation of the voting system which is the present invention[[, and]] that will produce an accurate count of votes which have been individually verified by the voters themselves.

The principal object of the present invention is to provide a voter with a printed ballot prepared by a voting station with a printer from input from the voter which accurately presents the vote of the voter, and which is in a familiar form for easy review by the voter, so that machine and human error may be detected and corrected before the ballot is submitted by the voter for tabulation with the votes of other voters.

The present invention is a voting system and method which, referring to FIG. 1, employs a computer voting station 1 which includes a computer 2 to which a display device 4, input device 3, and printer 5 are connected. The computer 2 may be a mainframe, a central computer with terminals, a standard personal computer, or a combination thereof. Such computers may be linked by local area networks 20, or networks linking several locations, or internet, with various types of direct connection, such as digital or acoustical telephonic, fibreoptic, satellite, or microwave. Such computers 2 may have internal memory, such as mainframes and personal computers, or may be terminals, with or without memory independent of the memory of the computer to which they are the operating interface. Such computers 2 may have data storage devices, such as fixed disk drives, or removable media drives, such as floppy drives, optical drives, bernoulli drives, or magnetic hard

disk drives, all of which may be internal or external to the computer 2, depending on the hardware configurations selected. The display devices 4 referred to may include standard visual displays, such as computer cathode ray tube monitors, TFT displays, plasma displays, and liquid crystal displays, and auditory displays, such as speakers and earphones, connected to sound wave generating interfaces in the computer. The input devices device 3 may include a keyboard, standard or braille for vision impaired voters, a pointing device, such as a computer mouse or trackball, a touchscreen, joysticks, or buttons such as on a video game controller.

[[The]] In the example of the auto-verifying voting system schematically shown in FIG. 2, the system operates through individual voting stations 1 that [[are]] include individual computers 2, such as personal computers, or terminals for a central computer, or a combination thereof, to each of which is connected a printer 5 with graphics capability. The preferred embodiment of the voting system would use a laser printer with a minimum resolution of 600 by 600 dots per inch, and which is capable of printing a paper ballot on which the selection of votes can be represented by filled-circles or other ballot selection markings, such as filled-ovals or filled-rectangles. Such a paper ballot should closely resemble the ballots normally published in advance of an election to inform the electorate of their choices and to create familiarity with the layout of the ballot. Also connected to the computer 2 in the voting station 1 may be a machine 6 which is capable of reading ballot selection markings previously described, either directly, through a master computer 7, or network 20 to which the computer 2 for the voting station 1 is connected. Such a machine will hereinafter be referred to as a "ballot scanning machine" 6, and is essentially an electro-optical sensing device from the well-known art under ~~Class 250/599 of the United States Patent Classification System.~~ Such a ballot scanning machine 6 may be interfaced with the computer 2 in the voting station 1 to scan the paper ballot printed by the printer 5 as voted by the voter. The printed ballot produced by the computer voting station 1 which shows the votes of a voter presented to the voter may either be compared by the voter, or by operation of the computer program 2a for the voting system with a ballot scanning machine 6, the machine capable of reading ballot selection markings, or by both methods, with the votes of the voter temporarily stored in the computer 2. The vote stored in the computer 2 is either in memory or on disk, also by operation of the computer program 2a for the voting system running in the computer 2. The result of the comparison is then judged acceptable or

unacceptable by the voter, in the case of comparison by the voter, or by the computer program 2a for the voting system, in the case of comparison with the ballot as read by the ballot scanning machine 6 in by the computer for the voting station 1, which is the preferred embodiment, so that only printed ballots which show votes by the voter identical to the votes of the voter stored in the computer 2 for the voting station 1 will be accepted for final tabulation 19, as shown in the schematic illustration of the voting method in FIG. 3. However, again referring to FIG. 3 such a comparison may also be made visually or in braille 13 by the voter, without the use of ~~[[such]]~~ a ballot scanning machine 6, resulting in a determination by the voter 15 of the acceptability of the printed ballot with the votes of the voter for final tabulation 19. Such final tabulation 19 may then be made by a tabulation machine 9 for the precinct~~[[,]]~~ (or other legally chosen voting subdivision)~~[[,]]~~ which, in a preferred embodiment, is one which has the same ballot scanning machine mechanism as the ballot scanning machine 6 which scanned the printed paper ballot for comparison 14 with the vote temporarily stored in the voting station 1 computer 2 memory.

The computer program 2a for the voting system may be running in a master computer 7 of which the voting stations 1 are terminals, or locally stored in each computer 2 for a voting station ~~[[itself]]~~, which may be a stand-alone computer 2, depending on the hardware configuration chosen to implement the voting system. The computer program 2a by which the voting system is operated, running in the computer 2 for a voting station 1, functions to cause the computer 2 for a voting station 1 to display voting information and instructions to the voter, as well as instructions and information as to the operation of the voting system. Such voting instructions may be presented by the program 2a visually or audibly, with various options for languages other than English for selection by the voter, and may include practical and legal warnings about voting and the abuse of the voting right. The type of display device 4, visual or auditory, as would be necessary for voters whose sight was impaired, may be selected by the voter before commencing the operation of the voting station 1 by program 2a selection or by prior arrangement with election officials. Such a selection may be implemented by directing the voter to a voting station 1 specially equipped for the selection, or by an option available in the computer program 2a in appropriately configured computer 2 voting stations 1.

The computer program 2a also displays the ballot for voting and provides for input of votes

by the voter, the type of display device 4 again being selected in advance of commencing operation of the voting station. [[The]] Again referring to FIG. 3, the voting method proceeds as the voter votes 10 by selecting his or her preference in candidates or issue positions by means of the input device 3 provided and recognized by the computer program 2a, and the computer program 2a temporarily stores such voting information in memory or on storage media. The computer program 2a may provide for review and correction of votes during the operation of the voting station 1 by the voter.

Upon or following temporary storage of the vote of the voter by the computer program 2a in the computer 2 for the voting station 1, the vote of the voter is then presented to the voter in the form of a paper ballot 11, 12 printed by the printer 5 for that voting station 1, the paper ballot being completed produced by the printer 5 in the printing process by the computer program 2a from the information concerning the vote of the voter stored in memory, such vote being represented on the printed ballot by filled-circles or other ballot selection markings related to the choices of the voter made upon voting. The printed ballot may be produced by the printer 5 by printing the votes of the voter on a pre-printed election ballot, or by printing the votes of the voter concurrently with the printing of the election ballot on the same paper as the election ballot is printed. The printed ballot may be embossed in braille directly by a braille printer for reading and verification by a sight-impaired voter 12, or translated and overprinted with the use of a machine using well-known technology for character recognition and braille printing. The voter then has an opportunity to examine the printed ballot for correctness with regard to the preferences expressed by his or her voting 13. If upon inspection of the printed ballot produced by the printer 5 for the voting station 1 used by the voter 13, the voter observes that the printed ballot correctly represents the votes of the voter 15, the ballot may be submitted by the voter 16 for processing to a ballot scanning machine 6 interfaced with that voting station 17. Such processing may proceed in the computer program 2a by comparison of the votes represented by ballot selection markings on the printed ballot with the votes stored in the computer 2 for the voting station 1. If the votes shown on the printed ballot are identical to the votes stored in the computer 2 for the voting station 1, the ballot is returned to the voter for presentation by the voter 16 for final tabulation 19 by one of the tabulating machines 9 for the voting precinct[[,]] (or other legally chosen voting subdivision), and the vote data which was

temporarily stored in the voting station 1 computer 2 is finally stored 19 for processing by the computer program 2a.

A ballot scanning machine 6 may also be programmed through the computer 2 for the voting station 1 to imprint the printed ballot with a validation marking or code which the tabulating machines 9 for the precinct require for acceptance of the printed ballot for tabulation. If the votes of the voter as shown on the printed ballot are not identical to the votes of the voter stored in the computer for the voting station 1 computer 2, the printed ballot presented to the voter may then be invalidated 14, 17, which may be evidenced by defacement or other treatment of the ballot, and the ballot may either ~~by the~~ be returned to the voter for reference, ~~if not~~ or destroyed 18. Such a ballot scanning machine 6 would in a preferred embodiment render such an invalidated ballot unacceptable by the tabulation machines machine 9 for the precinct, so that the votes on such an invalidated ballot could not be accepted as final votes for tabulation 19 with other votes. The vote information temporarily stored in the voting station 1 computer 2 would then be erased, and not stored for further processing with other final votes stored in the computer 2 for the voting station 1. Upon the occurrence of such an invalidation of a printed ballot the voting system would become subject to diagnostic review to determine the cause of the discrepancy, which may require the temporary closure of the system. If the hardware configuration permits, only the voting station 1 involved which produced the discrepancy would be shut down for diagnostic review, with the voter being directed to another voting station 1 to repeat the voting process.

The processing of the individual votes of the voters may include continuous tabulation 19 by inclusion of the vote of the voter in the total of votes cast in selection of the candidates or on the issue positions, database recording of the anonymous voting of each voter, real time read-out of voting information, and continuous comparison with the results of the vote counting by the tabulating machines machine 9 for the voting precinct. All of the voting activity of the computers 2, the voting stations 1, and the tabulations 19 by the voting precinct~~[[,]]~~ (or other legally chosen voting subdivision) ~~[[,]]~~ may be recorded for later review. Such voting activity may also be monitored in real-time, so that if discrepancies appear between ~~[[in]]~~ the tabulation of the votes cast as shown from the totals available from the computer program 2a for the voting stations 1 and the tabulation 19 of the votes cast by the tabulating machines machine 9 of the precinct, (or other legally

chosen voting subdivision)[[,]] those discrepancies may be brought to the attention of election officials, present to or removed from the precinct[[,]] (or other legally chosen voting subdivision).